CLAIMS:

1. An electrophoretic display (1), comprising:

a display device (15) further comprising a plurality of display elements (18);

input means (2) for receiving image information in consecutive frames;

first compression means (3) for compressing said received image information to increase availability of storage in said electrophoretic display (1);

a first memory (11) storing a look-up table (12) defining waveform and time parameters for effecting a change of the display elements (18) from a current optical state to a predetermined next optical state;

a second memory (9) storing and deleting said compressed received image information in accordance with a last-in-first-out (LIFO) protocol;

first decompression means (5) for decompressing said compressed received image information; and

a controller (7) configured to receive said compressed image information , store said compressed image information, delete said compressed information;

the controller (7) further configured to retrieve said look-up table (12) from said first memory (11), apply said waveform and time parameters included in said look-up table (12) to effect a change of the display elements (18) from said current optical state to said predetermined next optical state in dependence upon image information received in a current frame (N) and decompressed image information received in at least one prior frame (N-1).

2. The electrophoretic display of claim 1, further comprising second compression means (15) for compressing said look-up table (12) prior to storing said look-up table (12) in said first memory (11).

3. The electrophoretic display of claim 1, further comprising second decompression means (17) for decompressing said look-up table (12) stored in said first memory (11).

4. The electrophoretic display of claim 1, further comprising a plurality of look-up tables, each of said plurality of look-up tables indexed by temperature, each of said plurality of look-up tables defining waveform and time parameters for effecting a change of the display elements (18) from said current optical state to said next optical state in dependence upon said image information received in said current frame (N) and image information corresponding to at least one prior frame (N-1) for a particular temperature.

5. The electrophoretic display of claim 1, further comprising second compression means (15) for compressing said plurality of look-up tables prior to storing said plurality of look-up tables in said first memory (11).

6. The electrophoretic display of claim 1, further comprising a temperature sensor (13) configured to measure a temperature indicative of a temperature of the electrophoretic display (1), transmit said measured temperature to said controller (7).

7. The electrophoretic display of claim 6, wherein said controller (7) is further configured to receive said measured temperature from said temperature sensor (13).

8. The electrophoretic display of claim 1, wherein the predetermined next optical state is a gray scale.

9. The electrophoretic display of claim 1, wherein the predetermined next optical state is a color.

10. The electrophoretic display of claim 1, wherein the compression means performs compression by a lossless compressor.

11. The electrophoretic display of Claim 10, wherein the lossless compressor applies a lossless compression algorithm to said image information received in said consecutive frames.

12. The electrophoretic display of Claim 1, wherein the compression means performs compression by a lossy compressor.

13. The electrophoretic display of Claim 12, wherein the lossy compressor applies a lossy compression algorithm to said image information received in said consecutive frames.

14. A method for improving the storage density of data in an electrophoretic display device (1) comprising the acts of:

successively receive image information in consecutive frames;

compressing said image information received in said consecutive frames;

storing waveform and time parameters for effecting a change of the display elements (18) from a current optical state to a predetermined next optical state;

storing said compressed image information received in said consecutive frames in a second memory (9) in accordance with a last-in-first-out (LIFO) protocol;

decompressing, for a currently received frame (N), said compressed image information stored in said second memory (9) received in at least one prior frame (N-1);

retrieving, from said first memory (11), waveform and time parameters to effect a change of the display elements (18) from a current optical state to a predetermined next optical state in dependence upon said image information received in said currently received frame (N) and said decompressed image information received in said at least one prior frame (N-1); and

applying said retrieved waveform and time parameters to effect said change of the display elements (18) from said current optical state to said predetermined next optical state.

15. The method of claim 14, wherein said waveform and time parameters are stored in a look-up table (12) stored in a first memory (11).

16. The method of claim 15, further comprising the act of compressing said look-up table (12) prior to storing said look-up table (12) in said first memory (11).

17. The method of claim 14, wherein said waveform and time parameters are stored in a plurality of look-up tables, indexed by temperature, each of said look-up tables defining waveform and time parameters for effecting a change of the display elements (18) from said current optical state to said next optical state in dependence upon said image information received in said current frame (N) and image information received in said at least one prior frame (N-1) for a particular temperature.

18. The method of claim 17, further comprising the acts of: detecting a temperature indicative of the temperature of the electrophoretic display device (1), wherein said retrieving act is performed by retrieving a look-up table from among said plurality of look-up tables stored in said first memory (11) using said detected temperature as an index.

19. The method of claim 17, further comprising the act of compressing said plurality of look-up tables prior to storing said plurality of look-up tables in said first memory (11).

20. The method of claim 19, further comprising the acts of: detecting a temperature indicative of the temperature of the electrophoretic display device (1), wherein said retrieving act is performed by retrieving a look-up table from among said plurality of look-up tables stored in said first memory (11) using said detected temperature as an index; and decompressing said retrieved look-up table.

21. The method of claim 12, wherein the compression act is performed by a by a lossless compressor.

22. The method of Claim 21, wherein the lossless compressor applies a

lossless compression algorithm to said image information received in said consecutive frames.

23. The method of Claim 12, wherein the compression act is performed by a by a lossy compressor.

24. The method of Claim 23, wherein the lossy compressor applies a lossy compression algorithm to said image information received in said consecutive frames.

25. A computer program product for improving the storage density of data in

an electrophoretic display device (1), the computer program product comprising computer code devices configured to:

successively receive image information in consecutive frames;

compress said received image information to increase availability of storage in said electrophoretic display (1);

store a look-up table (12) defining waveform and time parameters for effecting a change of the display elements (18) from a current optical state to a predetermined next optical state;

store compressed received image information in accordance with a last-in-first-out (LIFO) protocol;

decompress said compressed received image information; and

apply said waveform and time parameters included in said look-up table (12) to effect a change of the display elements (18) from said current optical state to said predetermined next optical state in dependence upon image information received in a current frame (N) and decompressed image information received in at least one prior frame (N-1).